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it to be very fine rock matter, chiefly fragments of quartzite.

AN analysis of an artesian water from Derbyshire is given by John White in the *Analyst*, which is peculiar as containing barium, it being the first recorded occurrence of this metal in waters in this section. The well is 1,300 feet deep and 160 feet above the sea level. According to the analysis given, the water first obtained at depth of 837 feet, contained of barium carbonate 1.77 parts per 100,000; the deep water contained at first of barium chlorid 38.55 parts, and six months later 40.7; water eighty feet below the surface contained 3.03 parts. The sodium chlorid in the deep water was over two thousand parts. The author discusses the origin of the barium salt. Clowes has found minute crystals of barium sulfate in the red sandstone near Nottingham, and Dieulafoy has shown barium to be a constant constituent of primitive rocks, but this does not explain the conversion of the sulfate into carbonate or chlorid. The only possible explanation, according to the author, is that the barium sulfate has been at high temperature reduced to the sulfid by coal, and this converted into the chlorid by concentrated salt solution. The carbonate is derived from the chlorid. In confirmation of this it is pointed out that barium sulfate has been found in connection with coal deposits and barium chlorid in water in the vicinity of coal mines. It is, however, not impossible that under certain conditions, such as Melikoff has shown take place between sodium sulfate or sodium chlorid and calcium carbonate in the presence of aluminum or ferric hydroxid, a reaction may take place between the barium sulfate and sodium chlorid in a concentrated solution of the latter.

PROFESSOR VÈZES, of Bordeaux, has continued his work upon the oxalates and nitrites of the platinum metals, and his last contribution to the *Bulletin Société Chimique* is on the complex salts of palladium. A concentrated solution of potassium chloropalladite is converted by potassium oxalate into the pallado-oxalate, and the same salt is formed by the action of oxalic acid upon the pallado-nitrite. On the other hand, the pallado-oxalate is readily converted into the chloropalladite by

hydrochloric acid, and into the pallado-nitrate by potassium nitrate. These reactions correspond very closely to those of the platinum salts as investigated by Vèzes, except that only one modification of the pallado-oxalate has been found. The pallado-oxalic acid was also obtained and found to be tolerably stable.

The same journal contains analyses of a series of potassium, ammonium and silver salts of the so-called osmiamic acid, by Brizard, in which the formula proposed by Joly for this acid is fully confirmed. According to this, osmiamic acid is a nitroso compound, having the formula  $\text{OsO}(\text{NO})\text{OH}$ , and corresponds to nitrosohydroxid of ruthenium.

J. L. H.

#### CURRENT NOTES ON METEOROLOGY.

##### BLUE HILL OBSERVATORY BULLETINS.

BULLETIN No. 2 (1899) of Blue Hill Observatory, prepared by A. E. Sweetland, contains accounts of two remarkable snow storms which occurred during the past winter. The first storm, that of November 26-27, 1898, caused the wreck of 141 vessels on the New England coast, and the loss of 280 lives. It was during this storm that the steamer *Portland*, with about 175 persons on board, was lost off Cape Cod. The suddenness and violence of this storm were due to the rapid increase in energy which took place when a cyclone from the Gulf of Mexico and one from the Great Lakes met on the coast. The fall of snow was very heavy. On February 8-14, 1899, a severe cold wave and another heavy snowfall occurred. On February 13th, at 8 a. m., the zero isotherm extended as far south as latitude  $31^{\circ}$ . At Blue Hill the average temperature of the five days February 8-13 was  $3.1^{\circ}$  lower than the average of any successive five days since the Observatory was established. This cold wave was followed by a heavy snow storm, with high winds, along the North Atlantic coast. It is interesting to note that the preceding cold wave, although it caused much suffering by its severity at the time, had one very fortunate effect. The extreme cold which had almost closed some of the harbors with ice, and the difficulty of navigation when the waves, driven by the strong westerly gale, quickly

froze on decks and rigging, had resulted in keeping many vessels in port. In consequence, but few lives were lost at sea.

Bulletin No. 3, by S. P. Fergusson, is entitled *Progress of Experiments with Kites during 1897-98 at Blue Hill Observatory*, and presents an admirable summary of this work. Both Bulletins are abundantly illustrated.

#### SNOW ROLLERS.

THE March number of *Climate and Crops: New England Section* notes the occurrence of 'Snow Rollers' at Grafton, N. H., on March 16th, last. This is an interesting but comparatively rare phenomenon, occasionally observed in the winter season when freshly fallen snow is rolled into balls or cylinders by the wind. At Grafton these are stated to have been rolled up in countless numbers. Some of the rollers were as large as a barrel, and the fields and hills were covered with them. Other occurrences of the same phenomenon have been noted, within recent years, at Spokane, Wash., in December, 1895; at Hartford, Conn., on February 19, 1896, and in Saline county, Kan., on January 14, 1898. At Spokane there were 'hundreds of snow cylinders of uniform size, and as perfectly formed as though they had been cast in a mould.' The rollers were from 12 to 16 inches long, and from 6 to 10 inches in diameter. At Hartford some of the rollers measured 8 inches in diameter. In the Kansas case the size varied from that of base-balls to that of half-a-bushel measures. The uniform size, often noted, may be explained by the fact that the wind rolls the cylinders of snow along the ground until they become too heavy to be moved farther. If the velocity of the wind continues about the same it is likely, other things being equal, that the rollers will have about the same size.

#### A COURSE IN METEOROLOGY AT OHIO STATE UNIVERSITY.

It is a pleasure to note the establishment of a new course in meteorology at the Ohio State University, Columbus, Ohio. This course, which is being given by Mr. J. Warren Smith, Section Director of the U. S. Weather Bureau at Columbus, is required in the junior year in

the course in agriculture and horticulture, and is elective in the courses in arts, philosophy and science. It is also open to all teachers. Lectures began on March 29th, and are given twice a week during a term of ten weeks. The object of the course, as stated in the prospectus, is 'to open and outline a rational and systematic line of study of the leading facts concerning our atmosphere, and of the methods of observing and investigating the daily weather changes, and of the physical laws underlying these changes.' Davis's 'Elementary Meteorology' is used as a text-book. The lectures are illustrated by means of lantern views, and the 'laboratory work' includes the use of the ordinary instruments and practice in the construction of weather maps.

#### CLIMATE OF THE CONGO FREE STATE.

THERE has recently been published an admirable little pamphlet on the climate of the Congo Free State, by M. Lancaster, Director of the Meteorological Service of Belgium (*Court Aperçu du Climat du Congo*, 12mo., Brussels, 1899, pp. 43). This is a summary, in a very convenient form, of the meteorological portion of the volume on the climate, soils and hygiene of the Congo Free State, noticed in SCIENCE for January 13, 1899, p. 72, and is reprinted from the *Annuaire de l'Observatoire royal de Belgique pour 1899*.

R. DE C. WARD.

#### HARVARD UNIVERSITY

#### A NEW MARINE BIOLOGICAL LABORATORY.

AMERICAN biologists will doubtless be gratified to learn that the United States Fish Commission will maintain a marine biological laboratory at Beaufort, N. C., during the coming summer, and will probably undertake to establish a permanent laboratory at that place. The station will be fully equipped for a limited number of investigators and be ready for occupancy by June 1st. There will be one building devoted to laboratory purposes and another affording sleeping accommodations.

Dr. H. V. Wilson, professor of biology in the University of North Carolina, has been asked to become the director of the laboratory. Dr. Wilson was associated with the Commission at its Woods Holl laboratory for several years